

REMARKS

This is in response to the Office Action of July 2, 2008. Claim 72 is cancelled, without prejudice. Claims 1 and 73 are amended to more clearly define the invention. New claim 78 is added, based upon claims 1, 55-59, and 68. No new matter is introduced into the application by this Amendment. Claims 1, 55-71, and 73-78 are now pending in this application.

Formal matters

Claims 1, 72-74, and 77 were rejected under the second paragraph of 35 U.S.C. § 112 as failing to define the invention properly. Office Action, pages 2-3. Claims 1 and 73 have been amended to remove the term “varied” to which the Examiner objected. Claim 72 is cancelled to obviate the objection thereto. Applicant respectfully requests reconsideration of the rejection as to the recitation of terms such as “chemicals,” pesticides,” “biomolecules,” “toxic metals,” and “a toxic chemical gas” in claims 73 and 74. It is respectfully submitted that, based upon the descriptions in the specification and in other claims, persons skilled in the relevant art would have no difficulty in understanding this aspect of Applicant’s invention.

Beschke alone

Claims 1 and 68-77 were rejected under 35 U.S.C. §§ 102-103 over US 3,836,633 (Beschke). Office Action, pages 3-5. The rejections are respectfully traversed. The 1974 Beschke disclosure neither anticipates nor renders obvious the present invention.

The present invention relates to a synthesis of functional transition metal silicates for targeted activities such as decontamination, disinfection, microbicidal applications, and detoxification. This invention also relates to immobilization of functional transition metal silicates. The chemical immobilization provided by the present invention means that transition metal salt solution reacts with, or transition metal content chemically binds to, the material, as described in the specification.

The Beschke reference discloses (column 1, lines 18-21) a copper silicates that is useful as an additive to coatings and antifouling agents. In the present invention, a transition metal

silicate is effective as a decontaminant, a disinfectant, a microbicide or combination thereof. This efficacy of transition metal silicates is not disclosed in the prior art document. Moreover, column 1, lines 15-21 of the Beschke reference does not discuss microbes. Applicant respectfully submits that the term “microbe” is not used anywhere in the entire Beschke disclosure.

In point 13 on page 4 of the Office Action, the Examiner asserts that Beschke discloses a silica to copper ratio which falls within the range cited in Applicant’s claim. Applicant respectfully disagrees with the Examiner’s calculations. The Examiner states “col. 3 line 69 - col. 4 line 10, the Copper content of the silicate produce is 37.6% which means that the rest of the composition iss 62.4% silica” With regard to this, Applicant respectfully contends that Examiner has deducted the disclosed 37.6% (silicate percentage) from 100 to reach his conclusion. The line above the copper percentage in Beschke discloses the *Residue on ignition* percentage as 88.4% and the remaining percentage of 11.6 would alone be the content of copper. Actually the calculation is carried out with the total volume of 127.6 g of copper silicate. By simply adding all the units mentioned in the table cited by the Examiner, one can easily reach the total sum of 127.6. In the cited reference, if one calculates the copper content in proportion to the other residues, then the ratio will be 29.46:70.54 or 1.0:2.39. It will not be 62.4:37.6 or 1:0.60, as alleged in the Office Action.

With respect to the instant application, it is brought to the attention of the Examiner that Applicant’s silica to copper ratio is in the range of 1:0.34 to 1: 5.15, which is quite distinct from the ratios mentioned in the Beschke citation.

For the above reasons alone, it is evident that Applicant’s invention is patentably distinct from Beschke.

Beschke in view of Samad

Claims 55-59 were rejected under 35 U.S.C. §103 as being unpatentable over US 3,836,633 (Beschke) in view of US 5,632,904 (Samad). Office Action, pages 6-7. The rejection is respectfully traversed.

The invention of Applicant’s claims 55-59 are also not unpatentable over the cited patent documents. The Beschke disclosure is considered in detail above. Moreover, the prior art

teaches that a pH of about 6 is essential for the precipitation of copper silicate, whereas in the subject application, precipitation is possible under alkaline conditions. This is neither taught nor suggested by Beschke nor Samad.

In Samad, metal-ligand complexes are used for disinfecting water, thereby eliminating the detoxifying activity of the carcinogenic metals. This is a completely different approach from that of eliminating disease-causing bacteria in water. Thus, the cited Beschke and Samad documents give no direction sufficient to enable a person of ordinary skill in the art to envisage the present invention from their teachings.

New claim 78

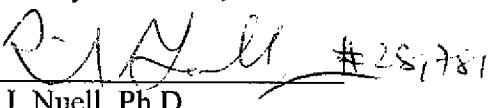
New claim 78 is not subject to any rejection of record. New claim 78 combines the features of claims 55-59 and 68 with the recitations of claim 1 in order to recite a subgenus of Applicant's invention which is not taught or suggested by the Beschke reference, alone or in combination with Samad.

Contact information

Withdrawal of all rejections of record is in order and is earnestly solicited. If there are any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8008.

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Respectfully submitted,

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